to said mirror and do not substantially co-incide with any significant part of the path of the emitted detection medium from the emitting means to the matter.

67. Apparatus according to claim 66, wherein said mirror is arranged to receive the varied medium directly from said matter.

68. Apparatus according to claim 66, and further comprising at least one planar mirror by way of which said beams travel from said matter to said rotary polygonal mirror.

69. Apparatus according to claim 66, wherein said emitting means is arranged to emit said medium in the form of a scanning beam which scans said detection zones.

70. Apparatus according to claim 66, wherein said emitting means emits said medium in the form of a plurality of scanning beams which are co-extensive with each other and which scan said detection zones.

71. Apparatus according to claim 66, wherein said detecting means comprises a plurality of detectors arranged to receive substantially simultaneously with each other the varied medium from, in turn, groups of detection spots whereof each group contains a plurality of detection spots and provides one of said detection zones.

72. Apparatus according to claim 66, and further comprising a camera arranged to detect spatial characteristics of individual objects of which said matter is comprised, and to generate further detection data in dependence upon the detected spatial characteristics, said data-obtaining means being arranged to employ the first-mentioned detection data to identify variations in the composition of said matter.

73. Apparatus according to claims 66, wherein said emitting means and said rotary polygonal mirror are arranged so as to be located at respective opposite sides of said matter, the apparatus further comprising shielding means arranged to prevent said detecting means from receiving the medium directly from said emitting means.

74. Apparatus according to claim 66, and further comprising a second rotary polygonal mirror arranged to receive detection medium which has been varied by variations in said matter, and second detecting means serving to receive the varied medium by

reflection from said second rotary polygonal mirror, to generate other detection data in dependence upon the variations in said medium, said data-obtaining means being connected to said second detecting means and serving to obtain said other detection data therefrom.

75. Apparatus according to claim 74, wherein the arrangement is such that beams of the varied medium which are received at said second detecting means and emanate from respective detection zones travel along respective paths from said matter to said second rotary polygonal mirror which paths converge continuously with respect to each other from said matter to said second rotary polygonal mirror.

76. Apparatus according to claim 74, wherein the first-mentioned rotary polygonal mirror and the first-mentioned detecting means are parts of a first inspection arrangement, said second rotary polygonal mirror and said second detecting means are parts of a second inspection arrangement, and the first and second inspection arrangements are disposed side-by-side.

77. Apparatus according to claim 76, wherein said first and second inspection arrangements are respective modules.

78. Apparatus according to claim 66, and further comprising a detection station which comprises the rotary polygonal mirror and the detecting means and through which said matter advances in a feed direction.

79. Apparatus according to claim 78, wherein the rotary polygonal mirror has its axis of rotation at substantially the axis of its polygon and extending in said feed direction.

80. Apparatus according to claim 78 wherein said emitting means is arranged to emit said medium in the form of a scanning beam which scans said detection zones, and wherein the scanning beam scans said matter transversely of said feed direction.

81. Apparatus according to claim 78, wherein the arrangement is such that said matter falls freely through said detection station.

82. Apparatus according to claim 81, and further comprising distributing means arranged to cause said matter to fall freely in a curved distribution around a vertical axis.

83. Apparatus according to claim 82, wherein said distributing

means is arranged to cause said distribution to be at a substantially constant radius from said vertical axis.

84. Apparatus according to claim 78 and further comprising a second rotary polygonal mirror arranged to receive detection medium which has been varied by variations in said matter, and second detecting means serving to receive the varied medium by reflection from said second rotary polygonal mirror, to generate other detection data in dependence upon the variations in said medium, said data-obtaining means being connected to said second detecting means and serving to obtain said other detection data therefrom, and wherein said feed direction is at an angle to the vertical and wherein the first-mentioned detection data and said other detection data are utilised to obtain an indication of height of a common zone of said matter.

85. Apparatus according to claim 66, wherein said emitting means serves to emit visible light as the detection medium, and wherein said data-obtaining means performs substantially simultaneous analysis of a plurality of wavelengths in the visible light spectrum.

86. A method of automatically inspecting matter, comprising emitting from emitting means a detection medium, which comprises electromagnetic radiation, to be active at said matter, said medium being varied by variations in said matter, receiving the varied medium from a multiplicity of detection zones at said matter at receiving means in the form of a rotary polygonal mirror, reflecting the varied medium from the mirror to a plurality of detecting means, detecting at said detecting means a plurality of discrete wavelengths of said varied medium substantially simultaneously, and generating detection data from said detecting means in respect of said plurality of discrete wavelengths substantially simultaneously and in dependence upon the variations in said medium, the beams of the varied medium which are received at said detecting means and emanate from the respective detection zones travelling along respective paths from said matter to said mirror which paths converge continuously with respect to each other from said matter to said mirror and do not substantially co-incide with any significant part of the path of the emitted detection medium from the emitting means to the

matter.

87. A method according to claim 86, wherein said beams travel directly from said matter to said mirror.

88. A method according to claim 86, wherein said medium is emitted in the form of a scanning beam which scans said detection zones.

89. A method according to claim 86, wherein said medium is emitted in the form of a plurality of scanning beams which are substantially co-extensive with each other and which scan said detection zones.

90. A method according to claim 86, wherein each detection zone is in the form of a group of detection spots, and wherein the varied medium from all of the detection spots in each group is received substantially simultaneously at said rotary polygonal mirror.

91. A method according to claim 90, wherein said matter comprises granulates.

92. A method according to claim 86, wherein said matter comprises individual objects, said detection data is employed to identify variations in the composition of said matter, a camera is utilised to detect spatial characteristics of said objects, and further detection data is generated in dependence upon the detected spatial characteristics.

93. A method according to claim 92, wherein said spatial characteristics comprise profiles of the respective objects.

94. A method according to claim 92, wherein said spatial characteristics comprise relative positions of the objects.

95. A method according to claim 86, wherein at least part of the emitted medium passes through said matter and is received at said rotary polygonal mirror, and said detecting means is prevented from receiving the medium directly from said emitting means.

96. A method according to claim 86, wherein said medium is active at said multiplicity of detection zones while said matter is falling freely at a detection level.

97. A method according to claim 96, wherein said matter falls freely in a curved distribution around a vertical axis.

98. A method according to claim 97, wherein said distribution is at a substantially constant radius from said axis.

99. A method according to claim 86, wherein said matter includes an object surfaces of which are orientated differently from each other, said medium being varied in its intensity in dependence upon the respective orientations of said surfaces, and said detection data is used to obtain an indication of a dimension of said object.

100. A method according to claim 86, wherein the detection medium is visible light and analysis of a plurality of wavelengths in the visible light spectrum is performed substantially simultaneously with each other upon the varied medium.

101. Apparatus for automatically inspecting matter, comprising emitting means serving to emit a detection medium, which comprises electromagnetic radiation, to be active at said matter, a rotary polygonal mirror arranged to receive directly from said matter detection medium varied by variations in said matter, detecting means serving to receive the varied medium by reflection from the rotary polygonal mirror, to detect a plurality of wavelengths of said varied medium substantially simultaneously, and to generate detection data in respect of said plurality of wavelengths substantially simultaneously and in dependence upon the variations in said medium, and data-obtaining means connected to said detecting means and serving to obtain said detection data therefrom, the arrangement being such that the path of the varied medium from the matter to the mirror does not substantially co-incide with any significant part of the path of the emitted detection medium from the emitting means to the matter.

102. Apparatus according to claim 101, and further comprising a detection station which comprises the rotary polygonal mirror and the detecting means and through which said matter advances in a feed direction, the mirror having its axis of rotation at substantially the axis of its polygon and extending in said feed direction.

103. Apparatus for automatically inspecting matter, comprising emitting means serving to emit a detection medium, which comprises electromagnetic radiation, to be active at said matter, a rotary polygonal mirror arranged to receive from a multiplicity

of detection zones at said matter detection medium varied by variations in said matter, at least one folding mirror by way of which said rotary polygonal mirror receives the varied medium, detecting means serving to receive the varied medium by reflection from the rotary polygonal mirror, to detect a plurality of wavelengths of said varied medium substantially simultaneously, and to generate detection data in respect of said plurality of wavelengths substantially simultaneously and in dependence upon the variations in said medium, and data-obtaining means connected to said detecting means and serving to obtain said detection data therefrom, the or each folding mirror being arranged to reflect varied medium from at least some of said multiplicity of detection zones.

104. A method of automatically inspecting matter comprised of differing materials, comprising emitting a beam of detection medium so that said beam scans said matter, said medium being varied by variations in the composition of said matter, and one of by passing said medium through said matter and through being reflected from said matter, receiving the varied medium at detecting means, generating detection data from said detecting means in dependence upon the variations in said medium, and identifying at least one of said materials from said data.

105. A method according to claim 104, wherein said medium is varied through being reflected from said matter, and said detecting means is prevented from receiving direct reflection of the emitted beam.

106. A method according to claims 104, and further comprising emitting, co-extensively with said beam, a second beam of detection medium so that said second beam also scans said matter.

107. Apparatus for automatically inspecting matter comprised of differing materials, comprising emitting means serving to emit a scanning beam of detection medium to scan said matter, receiving means arranged to receive detection medium varied by variations in the composition of said matter, detecting means serving to generate detection data in dependence upon the variations in said medium, and data-obtaining means connected to said detecting means and serving to obtain said detection data therefrom and to identify at least one of said materials from

said data.

108. Apparatus according to claim 107, wherein said emitting means and said receiving means are arranged to be located at a common side of said matter, and said receiving means is off-set relative to a direct reflection path of said beam.

109. Apparatus according to claim 107, wherein said emitting means serves to emit, co-extensively with said beam, a second beam of detection medium to scan said matter.

110. A method of automatically inspecting matter for varying composition, comprising advancing a stream of said matter comprised of individual objects, emitting a detection medium to be active at a multiplicity of individual detection zones distributed across substantially the width of said stream at a transverse section of said stream, said medium being varied by variations in the composition of said matter at said transverse section, receiving the varied medium at receiving means, generating detection data in dependence upon the variations in said medium, utilising a camera, which is other than said receiving means, to detect spatial characteristics of said objects, and generating further data in dependence upon said spatial characteristics.

111. A method according to claim 110, wherein said spatial characteristics comprise profiles of the respective objects.

112. A method according to claim 110, wherein said spatial characteristics comprise relative positions of the objects.

113. Apparatus for automatically inspecting matter for varying composition, comprising detection station means through which a stream of said matter comprised of individual objects advances, emitting means serving to emit a detection medium to be active at a multiplicity of individual detection zones distributed across substantially the width of said stream at a transverse section of said stream at said station means, receiving means serving to receive detection medium varied by variations in the composition of said matter at said section, detecting means serving to generate a first series of detection data in dependence upon the variations in said medium, a camera, which is other than said receiving means, at said station means and serving to detect spatial characteristics of said objects and

serving to generate a second series of detection data in dependence upon said spatial characteristics, and data-obtaining means connected to said detecting means and to said camera and serving to obtain the first and second series of detection data therefrom.

114. A method of automatically inspecting matter comprised of differing materials, comprising emitting a detection medium to be active at said matter, said medium being varied by variations in the composition of said matter, receiving the varied medium at receiving means from, in turn, groups of detection spots at said matter, whereof each group contains a plurality of said detection spots and provides one of said detection zones, with the varied medium from all of the detection spots in each group being received substantially simultaneously, generating detection data for each detection zone in dependence upon the variations in said medium at the detection zone, and identifying at least one of said materials from said data.

115. A method according to claim 114, wherein said matter comprises granulates.

116. Apparatus for automatically inspecting matter comprised of differing materials, comprising emitting means serving to emit a detection medium to be active at said matter, receiving means serving to receive detection medium varied by variations in the composition of said matter from, in turn, groups of detection spots at said matter, whereof each group contains a plurality of said detection spots and provides one of said detection zones, with the varied medium from all of the detection spots in each group being received substantially simultaneously, detecting means serving to generate detection data in dependence upon the variations in said medium at each detection zone, and data-obtaining means connected to said detecting means and serving to obtain said detection data therefrom and to identify at least one of said materials from said data.

117. Apparatus for automatically inspecting a stream of matter, comprising emitting means serving to emit a detection medium to be active at said matter, first and second receiving means of respective first and second inspection arrangements separate from each other and arranged to receive from said matter detection

medium varied by variations in said matter, first and second detecting means of said respective first and second inspection arrangements serving to receive the varied medium by reflection from the receiving means, and to generate detection data in dependence upon the variations in said medium, and data-obtaining means connected to said first and second detecting means and serving to obtain said detection data therefrom, the apparatus being such that the inspection paths of the respective inspection arrangements are substantially aligned with each other transversely of the stream to form a substantially continuous inspection path.

118. Apparatus according to claim 117, wherein the first and second inspection arrangements are disposed side-by-side.

119. Apparatus according to claim 117, wherein said inspection paths of the respective inspection arrangements substantially coincide at least partly with each other.

120. Apparatus for automatically inspecting matter, comprising emitting means serving to emit a detection medium, which comprises radiation, as a scanning beam to irradiate a path over said matter, inspecting means arranged to inspect the irradiated path at an oblique angle to said matter, and ascertaining means arranged to ascertain from that inspection the general profile of that path.

121. A method of inspecting matter, comprising emitting from emitting means a detection medium, which comprises radiation, to be active at said matter, said medium being varied by variations in said matter, at least part of the emitted medium passing through said matter and the varied medium which has passed through said matter being received at detecting means, and preventing said detecting means from receiving the medium directly from the emitting means.

122. A method according to claim 121, wherein the detection medium is visible light and analysis of a plurality of wavelengths in the visible light spectrum is performed substantially simultaneously with each other upon the varied medium.

123. Apparatus for inspecting matter, comprising emitting means serving to emit a detection medium, which comprises radiation,

to be active at said matter, detecting means arranged to receive, by passage of the medium through said matter, detection medium varied by variations in said matter, and shielding means arranged to prevent the detecting means from receiving the medium directly from the emitting means.

124. Apparatus according to claim 123, and further comprising receiving means located between said emitting means and said detecting means and through which the varied medium is arranged to pass, said receiving means comprising a Fresnel lens.